(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 6 July 2000 (06.07.2000)

PCT

(10) International Publication Number WO~00/38667~A3

(51) International Patent Classification': A61K 31/557, A61P 27/06

(21) International Application Number: PCT/US99/30746

(22) International Filing Date:

22 December 1999 (22.12.1999)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/113,695

24 December 1998 (24.12.1998) U 24 December 1998 (24.12.1998) U

60/113,697

all designated States except US): ALCON

(71) Applicant (for all designated States except US): ALCON LABORATORIES, INC. [US/US]; 6201 South Freeway, Fort Worth, TX 76134-2099 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): KLIMKO, Peter, G. [US/US]; 2115 Pembroke Drive, Fort Worth, TX 76110 (US). SHARIF, Najam, A. [GB/US]; 7 Courtney Court, Arlington, TX 76015 (US). GRIFFIN, Brenda, W. [US/US]; 1565 North Plantation Drive, Cookeville, TN 38506 (US).

(74) Agents: COPELAND, Barry, L. et al.; Alcon Laboratories, Inc., Patent Dept. Q-148, 6201 South Freeway, Fort Worth, TX 76134-2099 (US).

(81) Designated States (national): AU, BR, CA, JP, MX, US.

(84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published:

With international search report.

(88) Date of publication of the international search report: 11 January 2001

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

00/38667 A3

(54) Title: PROSTAGLANDIN E AGONISTS FOR TREATMENT OF GLAUCOMA

(57) Abstract: Compositions and methods for the treatment of glaucoma and/or ocular hypertension in mammals utilizing prostaglandin E receptor agonists, like rioprostol, sc-46275, enisoprost, misoprostol, nocloprost, 11-deoxy-16, 16-dimethyl-PGE2, 16,16-dimethyl-PGE2 and enprostil, are disclosed.

INTERNATIONAL SEARCH REPORT

Interna' 1 Application No PCT/US 99/30746

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61K31/557 A61P27/06

C. DOCUMENTS CONSIDERED TO BE RELEVANT

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 $\label{lem:lem:mum documentation searched (classification system followed by classification symbols)} \begin{tabular}{ll} IPC & 7 & A61K \end{tabular}$

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data, MEDLINE, BIOSIS, EMBASE

Category *	Citation of document, with indication, where appropriate, of the	he relevant passages	Relevant to claim No.		
X	WO 94 08585 A (ALCON LAB INC) 28 April 1994 (1994-04-28) abstract page 10, paragraph 2; claim 7		1-15		
X	SHEPPARD J.D.; SHRUM K.R.: "F Molteno implantation in compli inflammatory glaucoma" OPHTHALMIC SURGERY, vol. 26, no. 3, 1995, pages 21 XP000951406 abstract page 219, column 2, paragraph column 2, paragraph 1	cated 8-222,	1-3,8-11		
X Fun	her documents are listed in the continuation of box C.	Patent family members are listed	ın annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance. "E" earlier document but published on or after the international filing date. "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified). "O" document referring to an oral disclosure, use, exhibition or other means. "P" document published prior to the international filing date but later than the priority date claimed.		or priority date and not in conflict with cited to understand the principle or the invention. "X" document of particular relevance; the cannot be considered novel or cannot involve an inventive step when the document of particular relevance; the cannot be considered to involve an indocument is combined with one or ments, such combination being obvious the art.	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled		
Date of the	actual completion of the international search	Date of mailing of the international se	arch report		
1	9 October 2000	27/10/2000			
Name and	mading address of the ISA European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl. Fax: (+31-70) 340-3016	Authonzed officer A. Jakobs			

1

INTERNATIONAL SEARCH REPORT

Interna' 11 Application No PCT/US 99/30746

	PC1/US 99/30746		
ation) DOCUMENTS CONSIDERED TO BE RELEVANT			
Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
ANDLEY U P; FRITZ C; MORRISON A R; BECKER B: "The role of prostaglandins E2 and F2 alpha in ultraviolet radiation-induced cortical cataracts in vivo" INVESTIGATIVE OPHTHALMOLOGY AND VISUAL SCIENCE, vol. 37, no. 8, 1996, pages 1539-1548, XP000951411 abstract page 1541, column 1, paragraph 6 -column 2, paragraph 1 page 1543, column 2, paragraph 3 -page 1544, column 2, paragraph 1	1-3,8-11		
WATERBURY L D; EGLEN R M; FAUROT G F; COOPER G F: "EP-3 BUT NOT EP-2 FP OR TP PROSTANOID RECEPTOR STIMULATION MAY REDUCE INTRAOCULAR PRESSURE." INVEST OPHTHALMOL VISUAL SCI, vol. 31, no. 12, 1990, pages 2560-2567, XP000951484 abstract page 2566, column 1, paragraph 2; table 1 page 2566, column 2, paragraph 2 -page 2567, column 1, paragraph 1	1,6-9, 14,15		
EP 0 170 258 A (SYNTEX INC) 5 February 1986 (1986-02-05) abstract page 9, line 5-23; examples 17,18,23; table 1	1,6-9, 14,15		
ZHAN, GL.; CAMRAS, C. B.; OPERE, C.; TANG, L.; OHIA, S. E.: "Effect of prostaglandins on cyclic AMP production in cultured human ciliary muscle cells" J. OCUL. PHARMACOL. THER., vol. 14, no. 4, 1998, pages 293-304, XP000951407 abstract page 293, paragraph 1 -page 294, paragraph 1; figures 1A,5; table 1 page 300, paragraph 6 -page 301, paragraph 1	1-5,8-13		
	ANDLEY U P; FRITZ C; MORRISON A R; BECKER B: "The role of prostaglandins E2 and F2 alpha in ultraviolet radiation-induced cortical cataracts in vivo" INVESTIGATIVE OPHTHALMOLOGY AND VISUAL SCIENCE, vol. 37, no. 8, 1996, pages 1539-1548, XP000951411 abstract page 1541, column 1, paragraph 6 -column 2, paragraph 1 page 1543, column 2, paragraph 3 -page 1544, column 2, paragraph 1 WATERBURY L D; EGLEN R M; FAUROT G F; COOPER G F: "EP-3 BUT NOT EP-2 FP OR TP PROSTANOID RECEPTOR STIMULATION MAY REDUCE INTRAOCULAR PRESSURE." INVEST OPHTHALMOL VISUAL SCI, vol. 31, no. 12, 1990, pages 2560-2567, XP000951484 abstract page 2566, column 1, paragraph 2; table 1 page 2566, column 2, paragraph 2 -page 2567, column 1, paragraph 1 EP 0 170 258 A (SYNTEX INC) 5 February 1986 (1986-02-05) abstract page 9, line 5-23; examples 17,18,23; table 1 ZHAN, GL.; CAMRAS, C. B.; OPERE, C.; TANG, L.; OHIA, S. E.: "Effect of prostaglandins on cyclic AMP production in cultured human ciliary muscle cells" J. OCUL. PHARMACOL. THER., vol. 14, no. 4, 1998, pages 293-304, XP000951407 abstract page 293, paragraph 1 -page 294, paragraph 1; figures 1A,5; table 1		

1

International Application No. PC1/05 99 80/46	,						
FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210							
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:							
1. Claims: 1-15							

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claims 1,2,4,6,8,10,12 relate to a large number of possible compounds/therapeutic applications. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds/claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the compounds/therapeutic applications specifically mentioned in claims 3,5,7,11,13,15 in relation to the treatment of glaucoma and ocular hypertension.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

h.... mation on patent family members

Internal Application No PCT/US 99/30746

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
WO 9408585 A	28-04-1994	AT	153855 T	15-06-1997
		AU	674038 B	05-12-1996
		AU	5328694 A	09-05-1994
		DE	69311361 D	10-07-1997
		DE	69311361 T	08-01-1998
		EP	0664707 A	02-08-1995
		ES	2105333 T	16-10-1997
		HK	1007102 A	01-04-1999
		JP	3002258 B	24-01-2000
		JP	8502485 T	19-03-1996
		บร	5480900 A	02-01-1996
		US	5605922 A	25-02-1997
		US	5811443 A	22-09-1998
EP 0170258	05-02-1986	AT	48991 T	15-01-1990
•		AU	573018 B	26-05-1988
		AU	4562085 A	06-02-1986
		DE	3574968 D	01-02-1990
		DK	346085 A	01-02-1986
		ES	545700 D	16-06-1986
		ES	8607921 A	16-11-1986
		HU	38309 A,B	28-05-1986
		JP	61047459 A	07-03-1986
		NZ	212914 A	30-08-1988
		US	4792617 A	20-12-1988
		US	5057621 A	15-10-1991
		ZA	8505740 A	25-03-1987